

Positive energy vegetal school campus

by Jean-François Daures / 2019-05-28 11:36:10 / France / 8498 / FR



Primary energy need :
49 kWhep/m².an
 (Calculation method :)

ENERGY CONSUMPTION

Consumption Range (kWhep/m ² .an)	Grade	Building Grade
< 50	A	A
51 à 90	B	
91 à 150	C	
151 à 230	D	
231 à 330	E	
331 à 450	F	
> 450	G	

Economical building (Grades A-C) / *Energy-intensive building* (Grades D-G)

Building Type : School, college, university
Construction Year : 2013
Delivery year : 2014
Address 1 - street : Rue de la Prairie 07560 MONTPEZAT SOUS BAUZON, France
Climate zone : [Csa] Interior Mediterranean - Mild with dry, hot summer.

Net Floor Area : 620 m²
Construction/refurbishment cost : 1 300 000 €
Number of Pupil : 120 Pupil
Cost/m² : 2096.77 €/m²

Certifications :



General information

Vegetal architecture for the children of Montpezat.

School in the meadow or meadow in the school?

An **innovative and unique architecture** mainly composed of **plant material inert** for its structure and insulation **and living** for its siding.

In Montpezat sous Bauzon , **the meadow is the central space of the village** . Place of life and passage, this green space is lined with public buildings of the village. The new school is all on one level and therefore accessible to all is adapted to the size of the village, it had to **integrate without being camouflaged**.

The " **landscape building** " project proposed by the architect Jean-François Daures (VISION) will help develop a soft, landscaping attitude by truly "pulling" the green space of the "Prade" below and on the building. This is the creation of a **real biotope** in constant movement (seasonality of appearance, colors) showcase of the country's plant heritage **highlighting the flora and local biodiversity** .

A large **cold roof** , that is to say taken off above the project, forms a "marquee" to shelter the equipment and its immediate surroundings. A garden roof of almost 700m2 is built above a tree structure to **improve the thermal balance** and summer comfort, while absorbing airborne noise.

Between these two "hills", a local chestnut wood building whose uncertain shapes are reminiscent of farmhouses on the Ardèche plateau is a sign on the meadow. This sun-soaked atrium welcomes children and their parents. This space creates a soft interior circulation through the school and will be **the place of exchange between school life and that of the village** .

This eco-construction, with positive energy, ie producing more energy than it consumes, competition to the call for projects "demonstrators effinerergie +" chaired by the Rhône Alpes region and with the support of the ADEME

Finally, the construction of the new school, will be the opportunity to requalify the way of the meadow, which will also become a vegetated roadway to improve the permeability of the soil and regulate the car traffic for **a better security of the children** of the college like schools.

Sustainable development approach of the project owner

Small village "corridor" of less than 1000 souls today, Montpezat sous Bauzon near Aubenas, counted in 1950 up to 85 hotels, and draws its wealth from its hydraulic power station. It is a village as there is little that, instead of being built around a square, was built around a meadow, which already existed at the time of the Romans who organized there famous equestrian competitions . Place of life and passage, this communal green space is bordered by all the public buildings of the village. On the site of a former concrete boarding school from the 1970s, which was "nibbled" for recycling, the new wooden school building, which is now fully level to be accessible, is now erected. adapted to the evolution of the size of the village. The population was informed of the assets of their new School City thanks to the municipal bulletin where Jean-François Daures convinced of the value of the "faire-savoir" which he considers as inseparable from that "know-how", proposed for the writing of a written article as a true technical notice of the equipment, explaining to all its fundamental principles and indicating the ecological performances.

Architectural description

This project of construction of the vegetal school campus in the town of Montpezat sur Bauzon is the winner of the Rhône-Alpes Region's call for projects Effinerergie +. The architect Jean-François Daures proposed a plant architecture, showcasing local biodiversity and endowed with a strong pedagogical orientation that seduced the municipal team and won the support of teaching teams and the population.

Exergue: An innovative and unique plant architecture mainly composed of plant material inert for its structure and insulation and alive for its siding.

1 / The project

This unique and living "building-plant", proposed by the architect Jean-François Daures (VISION®) surrounded by a team composed of a thermist, an acoustician, an engineer Gilles Amblard (Altéaboïs) and the lighting designer, Pierre Morat, makes it possible to develop a gentle, landscaping attitude by truly "pulling" the green space of the meadow on the school campus entirely covered with a vegetated canopy. This is the creation of a real biotope in constant movement (seasonality of appearance, colors) showcase of the country's plant heritage highlighting the flora and local biodiversity. "Montpezat and its meadow are characterized by a very special biodiversity, including an endemic green lizard of about 40 cm and a flora that are threatened by hydrocarbons and heavy metals dripping from paved roads with too much waterproofing," explains Jean-François Daures. As part of my reflection on the requalification of the rue de la prairie I proposed to destroy the existing road (It also nibbled to be transformed into granulate, recycled in the foundations of the school) and replace it with a vegetated road using vegetated honeycomb plates (Niddaplast®). The effect is striking: the meadow has occupied the space totally and cars slow down in front of this unexpected coating, spontaneously below 15km / h which contributes to the safety of children. The resistance of the plates (12 t / axle) allows the passage of the school bus and the fire truck. ". The excellent permeability of this plant road, such as that of the 720 m2 green roof school city responds to flood phenomena that are recurrent in this place, during episodes Cévenols, and have now disappeared through this work.

Exergue: An innovative and unique plant architecture mainly composed of plant material inert for its structure and insulation and alive for its siding.

Building users opinion

An excellent feedback from the teaching staff who noticed a noticeable difference in the children's attention, which was increased thanks to the notion of comfort, the acoustic quality of the premises and the quality of the artificial lighting.

See more details about this project

<https://www.archivision.fr>

<https://www.construction21.org/france/articles/fr/green-solutions-la-cite-scolaire-vegetale-a-energie-positive-un-batiment-paysage.html>

Photo credit

Jean François Daures / Vision®



Stakeholders

Contractor

Name : Ville de Montpezat sous Bauzon

Contact : François Aubert - Ancien adjoint au maire

Construction Manager

Name : VISION® / Jean François Daures, architecte DPLG

Contact : Jean François Daures

<https://www.archivision.fr>

Stakeholders

Function : Structures calculist

Altéaboïs

Gilles Amblard

www.alteaboïs.com

Design office Structure, MOE (Construction Management)

Contracting method

Separate batches

Type of market

Table 'c21_algeria.rex_market_type' doesn't exist

Energy

Energy consumption

Primary energy need : 49,00 kWhep/m².an

Primary energy need for standard building : 50,00 kWhep/m².an

Calculation method :

Real final energy consumption

Final Energy : 49,00 kWh_{ep}/m².an

Envelope performance

Envelope U-Value : 0,23 W.m⁻².K⁻¹

More information :

Wood frame walls insulated with 30 cm of branded cellulose wadding and 4 cm of wood fiber (Actis) - Wood cladding in local chestnut regrowths treated with oleothermy.

Air Tightness Value : 0,43

Renewables & systems

Systems

Heating system :

- Urban network
- Wood boiler

Hot water system :

- Wood boiler

Ventilation system :

- Double flow heat exchanger

Renewable systems :

- Wood boiler

Urban environment

Built-up area : 700,00 %

Located in a green setting, this school town welcomes students from surrounding villages and hamlets. The low density urban environment is that of a village of about 900 inhabitants. It is built on the edge of largely herbaceous and wooded areas. Bike and pedestrian infrastructures have been created to get there. The school city has also had an impact on the urban environment, since the road that goes there is green.

Costs

Construction and exploitation costs

Total cost of the building : 1 300 000 €

Contest

Reasons for participating in the competition(s)

Health & comfort:

- Preliminary workshop "the ideal school, an ergonomic tool support of the pedagogy" with the actors concerned
- Modification of the initial project following the latter: remodeled atrium
- Modularity: possible addition of a classroom
- Protected school and peri-school circulation
- Temperature regulated by greening
- Careful ventilation
- Improved acoustics
- Driving natural light
- Furniture chosen in consultation

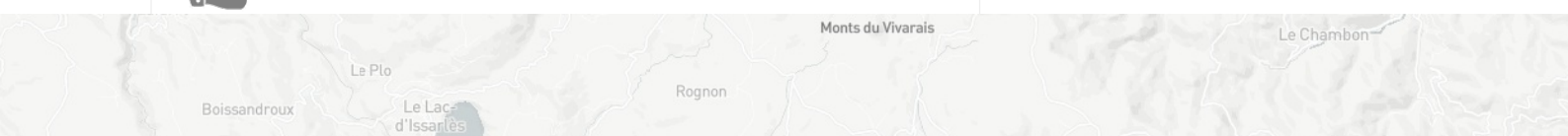
Other:

- Vegetation maintenance-free roofing
- Work with local resources, especially for wood
- Positive energy construction
- Green car route
- Existing heat network powered by a locally made wood pellet boiler

Building candidate in the category



Santé & Confort





Prix des Etudiants



Date Export : 20230903015258